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| 10/648,445 | 08/27/2003 | Heather N. Bean | 10018579-1 | 4591 |

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EXAMINER

KHAN, USMAN A

ART UNIT PAPER NUMBER

2622

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,445

Applicant(s)

BEAN ET AL.

Examiner

Usman Khan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 08/27/2003 has been considered by the examiner. The submission is in compliance with the provisions of 37 CFR 1.97.

Specification

The disclosure is objected to because of the following informalities: in line 7 of paragraph 0026 applicant mislabeled the type of pixel, the "type" should be changed to "type 2" also this sentence starting on line 7 should be reworded for clarification purposes since it is unclear what the applicant is stating on line 8 of paragraph 0026 i.e. "...control lines going the them, respectively...".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 - 9 and 13 - 20 and 24- 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinjo et al. (US patent No. 6,631,208).

Regarding **claim 1**, Kinjo et al. discloses a method of selectively reading less than all information from an image sensor for which member-pixels of a subset of the entire set of pixels are individually addressable (column 3, lines 32 *et seq.* figures 15A - 15F and 20A - 20B, column 18 lines 20 - 26), the method comprising: sampling information from a targeted member-pixel of the subset without having to read information from the entire set of pixels (column 13, lines 18 *et seq.*); and selectively reading information from another one or more but fewer than all member pixels of the entire set based upon the sampling information without having to read all pixels on the image sensor (column 4, lines 3 *et seq.*).

Regarding **claim 2**, Kinjo et al. discloses the method of claim 1, further comprising: reading information from member-pixels of the entire set that are located within a predetermined area adjacent to or surrounding the targeted member-pixel of the subset (column 3, lines 32 *et seq.*).

Regarding **claim 3**, Kinjo et al. discloses the method of claim 2, further comprising: organizing the entire set of pixels into partitions, each partition having multiple pixels (column 3, lines 32 *et seq.* and figures 15A - 15F and 20A - 20B, column 18 lines 20 - 26); mapping one or more of the partitions one or more of the member-pixels of the subset, respectively (column 3, lines 32 *et seq.* and figures 15A -

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15F and 20A – 20B, column 18 lines 20 – 26); reading information from all member-pixels of the subset so as to generate a plurality of samples (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26); handling the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26); and reading information from one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26).

Regarding **claim 4**, Kinjo et al. discloses the method of claim 1, further comprising: determining if the sampling information exceeds a reference value; and reading information from the one or more but fewer than all member-pixels of the entire set if the sampling information exceeds the reference value (column 3, line 32 - column 4 line 14 and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26).

Regarding **claim 5**, Kinjo et al. discloses the method of claim 4, wherein the reference value represents one of a user-determined threshold or a saturation threshold for the targeted member-pixel of the subset (column 17, line 37 – column 18, line 19).

Regarding **claim 6**, Kinjo et al. discloses the method of claim 4, further comprising: reading information from all member-pixels of the subset so as to generate

a plurality of samples (column 3 lines 51 *et seq.*), each member-pixel of the subset having a corresponding reference value, respectively (column 3 lines 51 *et seq.*); applying the determining step to each of the samples (column 3 lines 51 *et seq.*); and reading information from the one or more but fewer than all member-pixels of the entire set located within a predetermined area adjacent to or surrounding member-pixels for which the corresponding sample exceeds the respective reference value (column 17, line 37 – column 18, line 19).

Regarding **claim 7**, Kinjo et al. discloses the method of claim 4, wherein: the sampling information is the current sampling information (column 3 lines 51 *et seq.*) and the reference value is a first reference value (column 17, line 37 – column 18, line 19); and the method further comprises: taking the difference between the current sampling information and the first reference value (column 3 lines 51 *et seq.*); and reading from the one or more but fewer than all member-pixels of the entire set if the difference exceeds a second reference value (column 17, line 37 – column 18, line 19).

Regarding **claim 8**, Kinjo et al. discloses the method of claim 7, wherein the first reference value is the previous sampling information, respectively (column 17, line 37 – column 18, line 19).

Regarding **claim 9**, Kinjo et al. discloses the method of claim 7, further comprising: setting the first reference value to be equal to the current sampling

information if the difference exceeds the second reference value (column 17, lines 37 *et seq.*).

Regarding **claim 13**, Kinjo et al. discloses a method of selectively reading data from an image sensor, the method comprising: reading less than all data from an image sensor for which selected ones but not all of the entire set of pixels are individually addressable (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26).

Regarding **claim 14**, Kinjo et al. discloses the method of claim 13, further comprising: organizing the image sensor into a matrix of partitions (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26), each partition including a member-pixel of the subset referred to as a sampling pixel (it is inherent that each of these partitions will include a sampling pixel); sampling data from a sampling pixel without having to read information from the other pixels in the corresponding partition (column 13, lines 18 *et seq.*); selectively reading data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to read all of the pixels on the image sensor (column 4, lines 2 *et seq.*).

Regarding **claim 15**, Kinjo et al. discloses the method of claim 14, further comprising: reading data from partitions located within a predetermined area adjacent to or surrounding the sampling pixel (column 3, lines 32 *et seq.*).

Regarding **claim 16**, Kinjo et al. discloses the method of claim 14, further comprising: determining if the sampled-data exceeds a reference value; and reading data from the one or more but fewer than all member-pixels of the entire set if the sampled-data exceeds the reference value (column 3, line 32 - column 4 line 14 and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26).

Regarding **claim 17**, Kinjo et al. discloses the method of claim 16, wherein the reference value represents a saturation threshold for the targeted member-pixel of the subset (column 17, line 37 – column 18, line 19).

Regarding **claim 18**, Kinjo et al. discloses the method of claim 16, wherein: the sampled data is the currently sampled data (column 3 lines 51 *et seq.*) and the reference value is a first reference value (column 17, line 37 – column 18, line 19); and the method further comprises taking the difference between the currently sampled data and the first reference value (column 3 lines 51 *et seq.*), and reading from the one or more but fewer than all member-pixels of the entire set if the difference exceeds a second reference value (column 17, line 37 – column 18, line 19).

Regarding **claim 19**, Kinjo et al. discloses the method of claim 18, wherein the first reference value is the previously sampled data, respectively (column 17, line 37 – column 18, line 19).

Regarding **claim 20**, Kinjo et al. discloses the method of claim 18, further comprising: setting the first reference value to be equal to the currently sampled data if the difference exceeds the second reference value (column 17, lines 37 *et seq.*).

Regarding **claim 24**, Kinjo et al. discloses a digital camera (it is inherent that the method for correcting pixels can be implemented in the camera for reduction of size and ease of use) comprising: a pixel-differentiated image sensor for which member-pixels of a subset of the entire set of pixels are individually addressable (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26), the image sensor being controllable to read less than all of the pixels without having to read all of the pixels (column 13, lines 18 *et seq.*); and a processor operable to obtain sampling information from a targeted member-pixel of the subset without having to read information from the entire set of pixels (column 13, lines 18 *et seq.*; also it is inherent that this process is controlled by a processor); and selectively obtain information from another one or more but fewer than all member pixels of the entire set based upon the sampling information without having to read all of the pixels on the image sensor (column 4, lines 2 *et seq.*).

Regarding **claim 25**, Kinjo et al. discloses the digital camera of claim 24, wherein the processor is operable to selectively obtain information from member-pixels of the entire set that are located within a predetermined area adjacent to or surrounding the targeted member-pixel of the subset (column 3, lines 32 *et seq.*).

Regarding **claim 26**, Kinjo et al. discloses the digital camera of claim 25, wherein the entire set of pixels is further organized into partitions, each partition having multiple pixels (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26); one or more of the partitions being mapped one or more of the member-pixels of the subset, respectively (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26); the processor is operable to read information from all member-pixels of the subset so as to generate a plurality of samples (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26; also it is inherent that this process is controlled by a processor); the processor further being operable to handle the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26), and read information from one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples (column 3, lines 32 *et seq.* and figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26).

Regarding **claim 27**, Kinjo et al. discloses a digital camera (it is inherent that the method for correcting pixels can be implemented in the camera for reduction of size and ease of use) comprising: a pixel-differentiated image sensor for which selected ones of the entire set of pixels are individually addressable (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26), the image sensor being organized into a matrix of partitions column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26), each partition including a member-pixel of the subset referred to as a sampling pixel (it is inherent that each of these partitions will include a sampling pixel); and a processor operable to obtain sampling data from a sampling pixel without having to obtain information from the other pixels in the corresponding partition (column 13, lines 18 *et seq.*; also it is inherent that this process is controlled by a processor), and selectively obtain data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to obtain information from all of the pixels on the image sensor (column 4, lines 2 *et seq.*).

Regarding **claim 28**, Kinjo et al. discloses the digital camera of claim 27, wherein the processor is operable to selectively obtain data from partitions located within a predetermined area adjacent to or surrounding the sampling pixel (column 3, lines 32 *et seq.*; also it is inherent that this process is controlled by a processor).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10 -11 and 21 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinjo et al. (US patent No. 6,631,208) in further view of Horie et al. (US patent No. 6,480,624).

Regarding **claims 10 and 21**, as mentioned above in the discussion of claims 1 and 14 respectively, Kinjo et al. teaches all of the limitations of the parent claims. However, Kinjo et al. fails to disclose that the method further comprises: measuring an elapsed time; reading information from all member-pixels of the subset if the elapsed time exceeds a predetermined amount. Horie et al., on the other hand teaches that method comprises: measuring an elapsed time; reading information from all member-pixels of the subset if the elapsed time exceeds a predetermined amount.

More specifically, Horie et al. teaches that method comprises: measuring an elapsed time (column 8, lines 58 *et seq.*); reading information from all member-pixels of the subset if the elapsed time exceeds a predetermined amount (column 8, lines 58 *et seq.*).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Horie et al. with the teachings of Kinjo et

al. because in column 8, lines 58 *et seq.* Horie et al. teaches that the use of the time controlled image pickup will result exposure control, this will in turn result in a improved image.

Regarding **claims 11 and 22**, as mentioned above in the discussion of claims 10 and 21 respectively, Kinjo et al. and Horie et al. teach all of the limitations of the parent claims. Additionally, it is inherent that multiple instances of the elapsed time can be measured in the next cycle of the image capture.

Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinjo et al. (US patent No. 6,631,208) in further view of Examiners Official Notice.

Regarding **claims 12 and 23**, Kinjo et al. discloses the method of claims 1 and 14 respectively, wherein the image sensor is one of a CCD image sensor for which the subset is smaller than the entire set (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26). However, Kinjo et al. fails to disclose that a CMOS image sensor for which the subset is the same as the entire set (the examiner takes official notice that it is old and well known in the art to get high resolution output from a CMOS imager sensor the subset is the same size as the entire set i.e. the whole CMOS image sensor is read out).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to get high-resolution output from a CMOS imager sensor the entire CMOS image sensor is read.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Katsuyama (US patent No. 6,701,010) discloses clustering of pixels and using color information from individual pixels for correction.

Enomoto (US patent No. 7,024,035) discloses clustering of pixels and red eye area pixel correction.

Gupta (US patent No. 6,204,858) discloses clustering of pixels and red eye area pixel correction.

Sun et al. (US patent No. 6,272,250) discloses clustering of pixels and using color information from individual pixels for correction.

Enomoto (US PgPub 2003/0086134) discloses clustering of pixels and using exposure information from individual pixels for correction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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11/15/2006
Patent Examiner
Art Unit 2622



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